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Joan Bonsignore  
Signature

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:	RUMPF et al.	)	Examiner:	Stuart L. Hendricksen
		)		
Application Number:	09/857,490	)	Group Art Unit:	1754
		)		
Filed:	October 1, 2001	)	Confirmation No.:	5371
		)		
Docket No.:	97116CIP (3600-340))	)		

For: PROCESS FOR PRODUCTION OF CARBON BLACK

**REPLY BRIEF**  
**UNDER 37 C.F.R. § 41**

Mail Stop **Appeal Brief - Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

August 3, 2007

Sir:

Appellants hereby file a Reply Brief under 37 C.F.R. § 41.41 in response to the Examiner's Answer dated June 5, 2007. This Reply Brief is being submitted within two (2) months of the date of the Examiner's Answer and therefore is timely. The Board of Patent Appeals and Interferences is respectfully requested to consider the following comments that are in direct response to the Examiner's Answer and are supplemental to Appellants' Brief on Appeal filed on January 26, 2007.

Several of the Examiner's comments made in response to the Brief on Appeal are new relative to the earlier positions taken by the Examiner at the time of final rejection.

As a preliminary comment, Appellant notes that the "(3) Status of Claims" section on page 2, and the "(6) Grounds of Rejection to be Reviewed on Appeal" section on page 3 of the Examiner's Answer indicate that the Examiner's previous rejection of claim 18 has been withdrawn, but that the Examiner's rejections of other claims (i.e., claims 2-8 and 15-17) remain on appeal.

Therefore, Appellants' additional comments presented herein relate to several of the new comments made by the Examiner in the Examiner's Answer with respect to the remaining rejections under appeal.

#### Responses to Examiner's New Comments

1. At page 4, under the "(10) Response to Argument" section heading, of the Examiner's Answer, the Examiner states:

... While the examples of the [Rothbühr et al.] reference appear fuel-lean, column 1 contains an extended discussion of how the amounts of fuel, feedstock and air can be altered, depending on what carbon black properties are desired. See particularly lines 52-56. ... Further, Rothbühr fig. 2 indicates that to get a low DBP value, one must use a large volume of residual gas, and must accept the consequences of 'lower yield' to attain this product of desired. To draw an analogy, mining a river for gold is a 'low yield' process as compared to extracting mud from a river, however it is a worthwhile endeavor.

In reply, Appellants note that the passage at col. 1, lines 52-56 of the Background section of Rothbühr et al. cited by the Examiner states that "Whenever one wishes to achieve high yields, i.e., whenever as little as possible air-oxygen is to come into contact with the carbon black raw material and is to burn the latter, as high volumes as possible as fuel gas are used [sic]." When read in

isolation and out of context, this statement at col. 1, lines 52-56 might appear to suggest a trend to run a process wherein the amount of fuel reaches or approaches stoichiometric. However, according to Rothbühr et al. at col. 1, lines 58-62, the amount of fuel cannot be greater than the amount of oxygen because such a process would damage the liner of the reactor. Therefore, when the passage at col. 1, lines 52-56 is properly read in the context of the full descriptions of Rothbühr et al., the reference teaches away from having a fuel-rich process, and thus away from the present invention.

As to the Examiner's reference to Fig. 2 of Rothbühr et al., the reference merely indicates that this graph shows a plot of DBP-absorption vs. recycled quantity of residual gas *within a lean gas regime of operation* (see col. 7, lines 43-64, Table 3). Rothbühr et al. specifically discloses that the data shown in Fig. 2 involved introduction of 27 Nm<sup>3</sup>/h air, 1.9 Nm<sup>3</sup>/h natural gas, and 0, 5, 10 or 15 Nm<sup>3</sup>/h recycled residual gas. Therefore, Fig. 2 merely reflects experimental data collected by Rothbühr et al. showing how DBP absorption properties of carbon black can be affected by the recycle rate of exhaust gas *within a lean gas regime of operation*. Fig. 2 of Rothbühr et al. does not teach or suggest what might happen under a fuel-rich condition with respect to DBP properties or other properties of the carbon black products.

2. Also at page 4 of the Examiner's Answer, the Examiner states:

The argument that Rothbühr col. 1 lines 45-52 is a discussion of a fuel-lean option is not persuasive since the placement of the comma can be read as two different meanings (that the air that is in deficiency) and in any event lines 53-56 are clearly fuel rich. The caution of col. 1 lines 58-62 simply means that the fuel cannot be too rich; there is a limit as to how rich it can be.

The Examiner's argument that the placement of the comma within the passage at col. 1, lines 45-52 of Rothbühr et al. allows the content thereof to be read more than one way, inclusive of an air deficient scenario, conflicts with the common ordinary construction and meaning of the

language in question. First of all, the Examiner's reference to col. 1, 45-52 in this regard encompasses *two* separate sentences containing *three* different uses of a comma. The Examiner's Answer does not identify which of these three commas is being referenced by the Examiner. Presumably, the Examiner is referring to the comma in the opening sentence set forth at col. 1, lines 45-48, which states:

The fuel gas required for energy production (or some other fuel) is mostly employed in such volumes, related to the volume of oxygen introduced with the combustion air, that it is present in deficiency.

[Appellants' emphasis added by underlining]

Appellants submit that normal and ordinary construction of the above sentence is that the term "it," which located after the second comma, is referring back to the initial antecedent of fuel gas set forth in the sentence, and not the oxygen or air mentioned in the intermediate clause. Otherwise, the sentence is not a complete sentence in the English language. That is to say, the first and last clauses of this sentence at col. 1, lines 45-48 of the Rothbühr et al. reference must be read together for the sentence to make sense. The intermediate clause merely exemplifies what the volumes of fuel gas are deficient in relation to.

The Examiner's additional comment that col. 1, lines 53-56 of Rothbühr et al. in any event clearly provides for fuel rich conditions is incorrect for the reasons previously explained above by Appellant in response section 1.

Appellants also dispute the Examiner's characterization of the "caution" of col. 1, lines 58-62 Rothbühr et al. *as simply meaning* that the fuel cannot be too rich and that there is a limit as to how rich. This passage clearly teaches persons of ordinary skill away from considering the

which does not indicate that off-gas from a carbon black furnace is the only combustible gas supplied to a burner portion of the carbon black furnace, unlike the recitations of claim 2 on appeal. The alternative reference made by the Examiner to col. 4, lines 28-30 of Rothbühr et al. appears to relate to a method of operation disclosed in German AS No. 1592913, and not Rothbühr et al.'s process, and Rothbühr et al. specifically states that this German method "ultimately differs from the method of operation of this [Rothbühr et al.'s] invention ...". See col. 4, lines 29-31 of Rothbühr et al.

In view of the above responses to the Examiner's new comments on the rejections set forth in the Examiner's Answer, it is respectfully submitted that the Examiner still has not established a *prima facie* case of obviousness against of claims 2-8 and 15-17 that remain on appeal based on any of the rejections relying on the Rothbühr et al. reference.

Other matters raised in the Examiner's Answer have been adequately addressed in the Appeal Brief, and no further comment thereon from Appellant is needed at this time to further assist the Honorable Board in reaching its decision in this matter.

## CONCLUSION

Accordingly, for the reasons set forth in the Brief on Appeal filed on January 26, 2007, and additionally for the reasons set forth herein, it is respectfully submitted that the Examiner's rejections of pending claims 2-8 and 15-17 are in error and should be reversed.

If there are any additional fees due in connection with the filing of this Reply to Examiner's Answer, please charge the fee to Deposit Account No. 03-0060.

use of a "high amount of fuel gas," and instead is steering them towards the fuel lean conditions touted by this reference at virtually every opportunity.

3. At page 5 of the Examiner's Answer, the Examiner states:

The experiment 4/V121 in col. 9 indicates that the recycle gas was not combusted. Thus, there was no excess oxygen. Thus it was already fuel rich.

Appellants point out that the technical nexus between the Examiner's more detailed assertion and conclusion in this respect is still not explained, nor is it self-evident in the absence of such explanation. That is, it is not apparent in col. 9 of Rothbühr et al. where it may suggest that the recycle gas in experiment 4/V121 was *not* combusted. The temperature of the exhaust gas used in experiment 4/V121 was 80°C, if that is the Examiner's suggestion, but the Rothbühr et al. reference does not indicate that this particular parameter value results in fuel-rich conditions, and actually indicates the opposite result occurs (see col. 9, lines 44-45). Assumptions of fuel rich conditions for experiment 4/V121 conflict with what the inventors of Rothbühr et al. explicitly stated in that their process and system operates on a "lean gas" condition. See, for example, col. 3, lines 47-60 and col. 9, lines 45-49. Thus, the inventors in Rothbühr et al. characterized their own described invention as a "lean gas" strategy, and not something else.


4. Also at page 5 of the Examiner's Answer, the Examiner states:

Concerning claim 2, col. 1 implies that the fuel need not be a gas and col. 4 lines 28-30 recite gasoline as fuel. Thus, when a non-gas fuel is used, the recycle gas is the only gas.

In response to this new comment, Appellants point out that col. 1, lines 22-25 of Rothbühr et al. teaches that a fuel gas or a liquid fuel is used in producing the combustion gases,

U.S. Patent Application No. 09/857,490  
Appellants' Reply Brief dated August 3, 2007  
Reply to Examiner's Answer dated June 5, 2007

Respectfully submitted,



Luke A. Kilyk  
Reg. No. 33,254

Atty. Docket No. 97116CIP (3600-340)  
KILYK & BOWERSOX, P.L.L.C.  
400 Holiday Court, Suite 102  
Warrenton, VA 20186  
Tel.: (540) 428-1701  
Fax: (540) 428-1721